Space Acceleration Measurement Systems (SAMS)

Glenn Research Center

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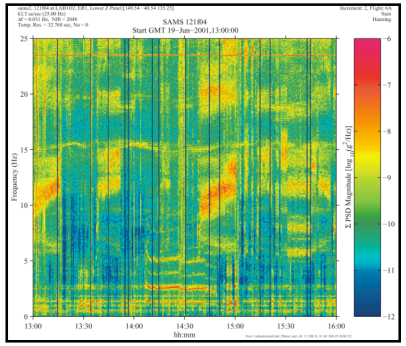
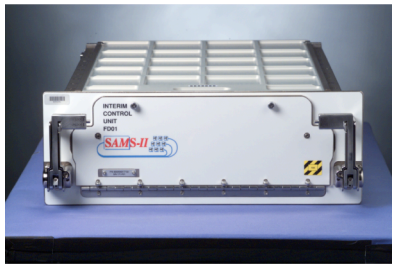
SAMS acceleration data



SAMS Interim Control Unit



Objective:

- Provide acceleration measurement systems that meet the requirements of the researchers on board the International Space Station.
- SAMS measures the acceleration environment in the 0.01 to 400 Hz range for payloads.

Relevance/Impact:

- SAMS will measure the acceleration environment for research payloads and other customers on board the ISS.

Development Approach:

- SAMS was developed using a dedicated function approach using an Interim Control Unit and SAMS laptop (located in Express Rack 4) for command and control and a Remote Triaxial Sensors to measure the vibratory environment.

Current On Orbit Configuration:

- SAMS is currently on board the ISS with a mass of 10.44 kg, and a volume of 0.013 cubic meters.
- SAMS has 2 sensors (SE-F02, SE-F03) located in Express Rack 1, Drawer 1. SAMS has 2 sensors (SE-F04, SE-F05) located in Express Rack 1, Drawer 2. SAMS has 1 sensor (SE-F08) located in the working volume of the Microgravity Science Glovebox (MSG).

ISS Resource Requirements

Accommodation (carrier)	EXPRESS rack 4, and 1
Upmass (kg) (w/o packing factor)	10.44
Volume (m^3) (w/o packing factor)	0.013
Power (kw) (peak)	0.04 (SAMS system power)
Crew Time (hrs) (installation/operations)	0.17 (10 minutes)
Launch/Increment	6A/Inc 1 (SAMS on orbit)

Project Life Cycle Schedule

Milestones	SCR	RDR	PDR	CDR	VRR	Safety	FHA	Launch	Ops	Return	Final Report
Actual/ Baseline	N/A	N/A	12/1995	9/1997	1/2000	9/2000	12/2000	6A Apr 2001	N/A	N/A	TBD
Documentation	Website:http://spaceflightsystems.grc.nasa.gov/Advanced/ISSResearch/Acceleration/SAMS eRoom:https://collaboration.grc.nasa.gov/eRoom/NASAc1f1/ISSHumanResearchProjectsOffice				SRD: EDMP:http://edmp.grc.nasa.gov			Project Plan:https://collaboration.grc.nasa.gov/eRoom/NASAc1f1/ISSResearchProject SEMP:			